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(71) Applicant: METALLURGICA METRA TRAFILATI  
ALLUMINIO S.p.A.  
Via Provinciale Stacca, 1  
I-25050 Rodengo Saiano (Brescia)(IT)

(72) Inventor: Giacomelli, Mario Metallurgica Metra  
Trafilati  
Alluminio S.P.A. Via Provinciale Stacca 1  
I-25050 - Rodengo Saiano (Brescia)(IT)

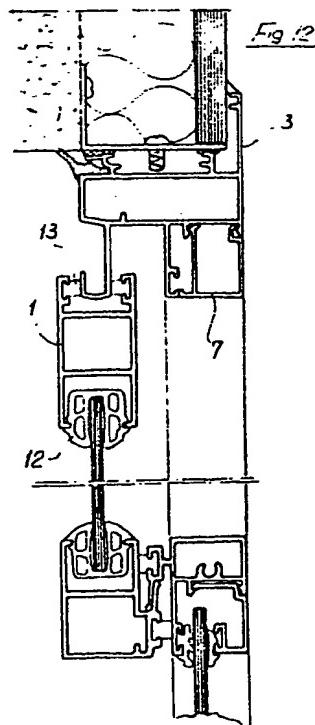
(74) Representative: Cicogna, Franco  
Ufficio Internazionale Brevetti Dott.Prof.  
Franco Cicogna Via Visconti di Modrone,  
14/A  
I-20122 Milano(IT)

(54) Structurally cooperating section member assembly for making sliding shutter windows and fastenings in general.

(57) There is disclosed an assembly of cooperating metal section members, made of light alloys, which have been specifically designed for making sliding shutter windows.

The section member assembly comprises a section member for making window frames, a section member (1) for making movable panel cross-members, a section member (3) for making fixed frame uprights, a section member for making movable panel uprights, a protection section member, a snap fitted section member, cooperating with sliding guides, a snap fitted half-hollow section member (7), cooperating with fixed frame uprights, a hollow T-shaped section member, a further hollow section member having outer lugs for engaging gaskets and two further section members for making movable panel cross-members which have been suitably modified with respect to the previously mentioned section member.

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BACKGROUND OF THE INVENTION

The present invention relates to an assembly of structurally cooperating section members, for making sliding shutter windows and fastenings in general.

As is known, there are presently commercially available a plurality of fastenings, such as windows, windows-doors and the like, which are made by suitably assembling metal section members, of suitably different size cross-sections.

SUMMARY OF THE INVENTION

The task of the present invention is to provide an assembly of structurally cooperating section members which affords the possibility of making, by substantially simple assembling operations, fastenings and the like.

Within that task, a main object of the present invention is to provide an assembly of structurally cooperating section members adapted for facilitating the making procedure of sliding panel or shutter windows.

Another object of the present invention is to provide an assembly of structurally cooperating section members, able of providing a suitable tightness of the mentioned sliding panels or shutters.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more apparent thereafter, are achieved by an assembly of structurally cooperating section members, characterized in that it comprises a section member for making window frames, a section member for making movable panel cross-members, a section member for making fixed frame uprights, a tightness section member for movable panel uprights, a protecting section member, a snap-fitted section member, cooperating with sliding guides, a half-hollow, snap-fitted section member, cooperating with fixed frame uprights, a T-shaped hollow section member, a further hollow section member provided with outer lugs for engaging gaskets, and two further movable panel section members for making cross-members.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the assembly of cooperating section members, accord-

ing to the present invention, will become more apparent thereafter from the following detailed description of a preferred embodiment of said section members, being illustrated, by way of an indicative but not limitative example, jointly with two possible window types which may be made by assembling said section members, in the Figures of the accompanying drawings, where:

Figures 1 to 11 are cross-sectional views illustrating the section members included in the assembly according to the present invention;

Figure 12 illustrates a window provided with a pair of mutually sliding shutters which are limited, at the top and at the bottom, by horizontally extending fixed panels;

Figure 13 is a partial horizontal cross-sectional view illustrating said sliding shutters and one of the uprights of the related fixed frame;

Figure 14 illustrates a window provided with a fixed panel and a sliding panel;

Figure 15 illustrates a partial cross-sectional view of the sliding panel and cross-members forming its fixed frame;

Figure 16 is a partial horizontal cross-sectional view of the fixed panel and a portion of the movable panel coupled thereto;

Figure 17 shows a vertical cross-sectional view of the top cross-member of the movable panel and the corresponding fixed frame; and

Figure 18 illustrates a vertical cross-sectional view of the bottom cross-member of a tiltable panel and related fixed frame.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the Figures of the accompanying drawings, the assembly of structurally cooperating section members, for making sliding shutter windows, according to the present invention, comprises a section member 1 for making window frames; a section member 2 for making cross-members of movable panels; a section member 3 for making uprights of fixed frames; a tightness section member 4 for tightly coupling movable panel uprights; a protection section member 5; a snap-fitted section member 6 cooperating with sliding guides; a half-hollow section member 7, adapted for snap-fitting engagement, cooperating

with uprights of fixed frames; a hollow T-shaped section member 8; a further hollow section member 9 having outer lugs for engaging gaskets; and two further section members 10 and 11 for making movable panel cross-members, which latter section members have been suitably modified with respect to the previously mentioned section member.

The above disclosed section members afford the possibility of making, in cooperation with further linearly extending structures, having suitably sized and designed cross-sections, fastenings in general, and in particular windows of the type which is shown in Figures 12 and 14.

In this connection it should be pointed out that the section members 1 for making frames may advantageously be also used as glass-restraining elements, possibly with the interposition of suitable gaskets 12, said frame making section members 1 being provided with shaped seats at one end thereof.

The mentioned shaped seats may house, depending on requirements, both tightness gaskets 13 and the projecting lugs of the section member 4 which, after locking to said section member 1, by means of screws 14, provides tightness between the opposite sliding panels or shutters.

From the above disclosure and the Figures of the accompanying drawings, the great use facility and functionality characterizing the section member assembly according to the invention will be self evident.

While the invention has been disclosed with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to many modifications and variations all of which will enter the spirit of the invention and the scope of the appended Claims.

### Claims

1. An assembly of structurally cooperating section members, characterized in that it comprises a section member for making window frames, a section member for making movable panel cross-members, a section member for making fixed frame uprights, a tightness section member for movable panel uprights, a protecting section member, a snap-fitted section member, cooperating with sliding guides, a half-hollow, snap-fitted, section member, cooperating with fixed frame uprights, a T-shaped hollow section member, a further hollow section member provided with outer lugs for engaging gaskets, and two further movable panel section members for making cross-members.

2. A section member assembly, according to the preceding Claim, characterized in that the section members of said assembly are adapted, in

cooperation with further rectilinearly extending structures, having suitably designed and sized cross-sections, for making fastenings in general, and, in particular, sliding panel or shutter windows.

- 5 3. A section member assembly, according to the preceding Claims, characterized in that said section members for making frames may also advantageously be used as glass-restraining elements, possibly with the interposition of tightness gaskets, and are provided with shaped seats at one end thereof, said shaped seats being designed for housing, depending on requirements, both tightness gaskets and the projecting lugs of said upright tightness section member which, as it is locked to said frame making section members, by means of screws, provides tightness between opposite sliding panels or shutters.
- 10 4. A section member assembly, according to the preceding Claims, and substantially as broadly disclosed and illustrated in the preceding disclosure and several Figures of the accompanying drawings, constituting an integrating part of the subject Patent Application.

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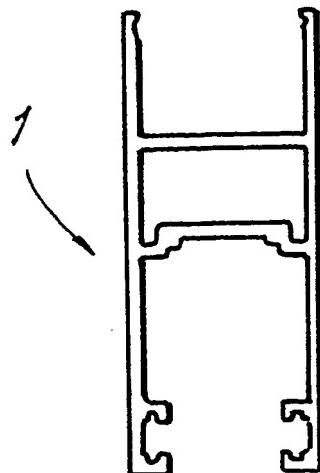
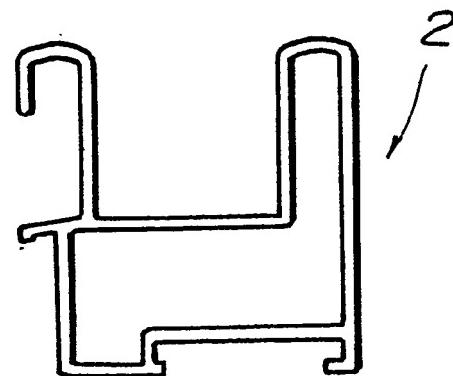
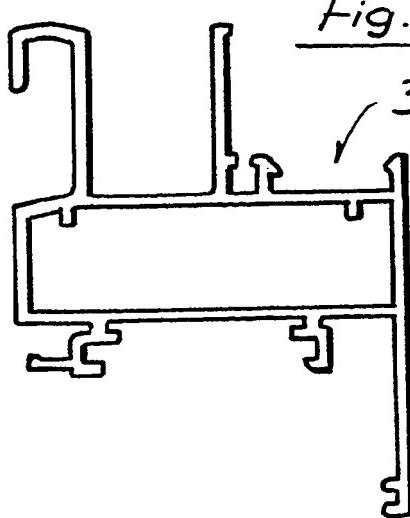
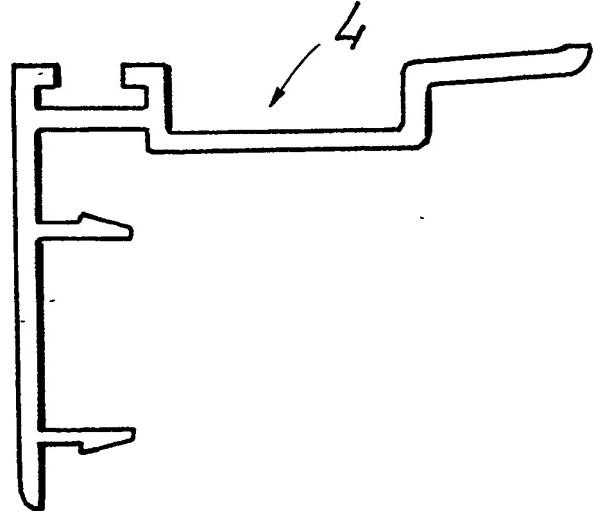
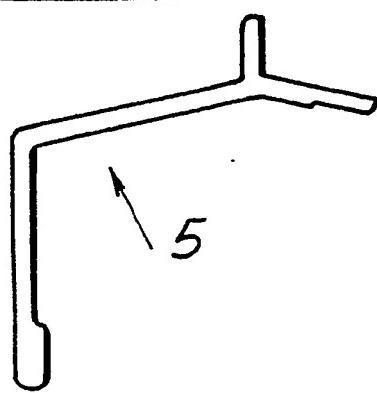
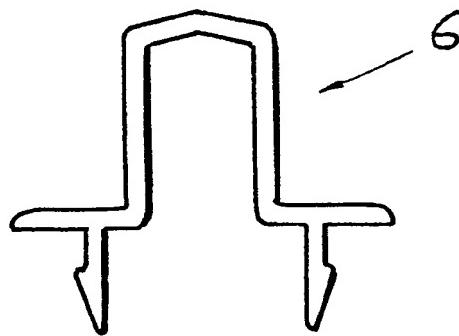
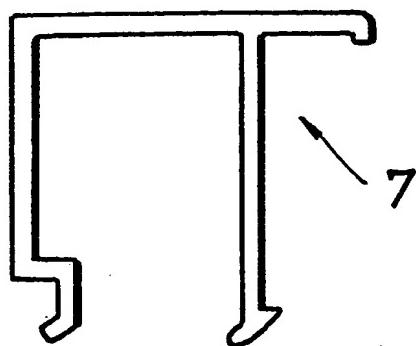
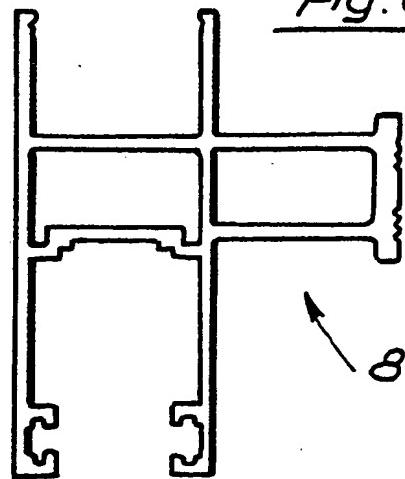
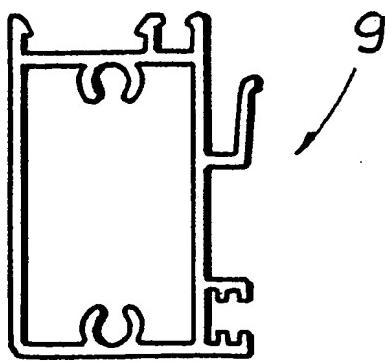
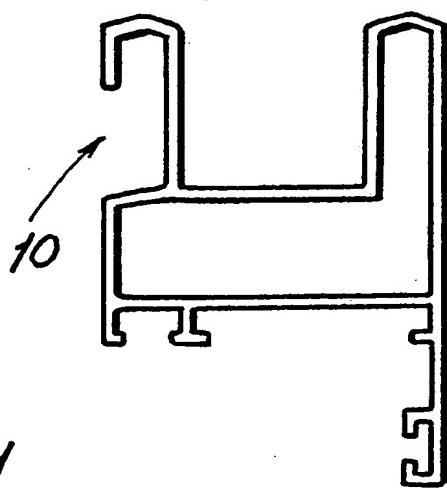
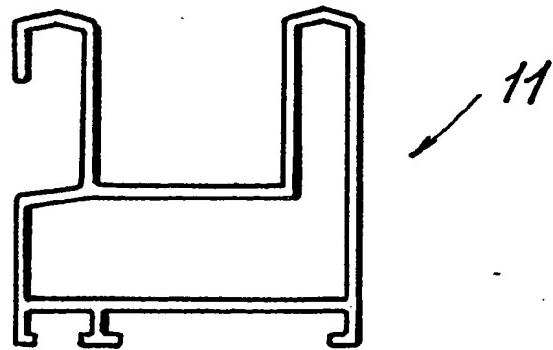
Fig. 1Fig. 2Fig. 3Fig. 4Fig. 5Fig. 6

Fig. 7Fig. 8Fig. 9Fig. 10Fig. 11

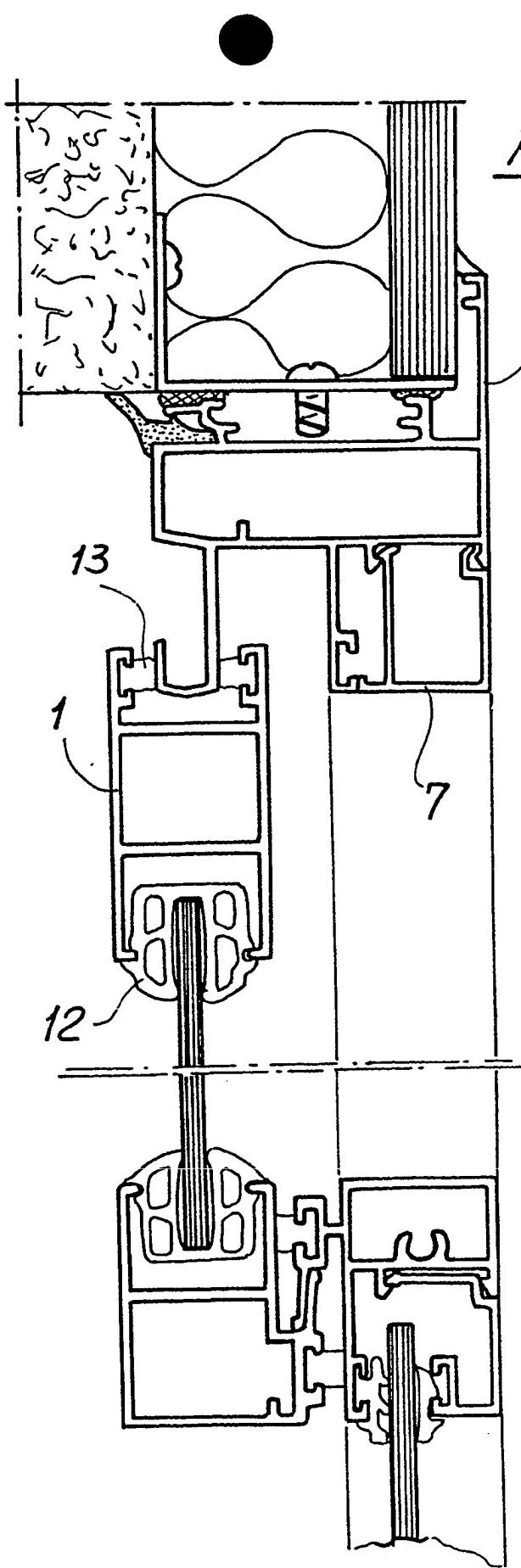
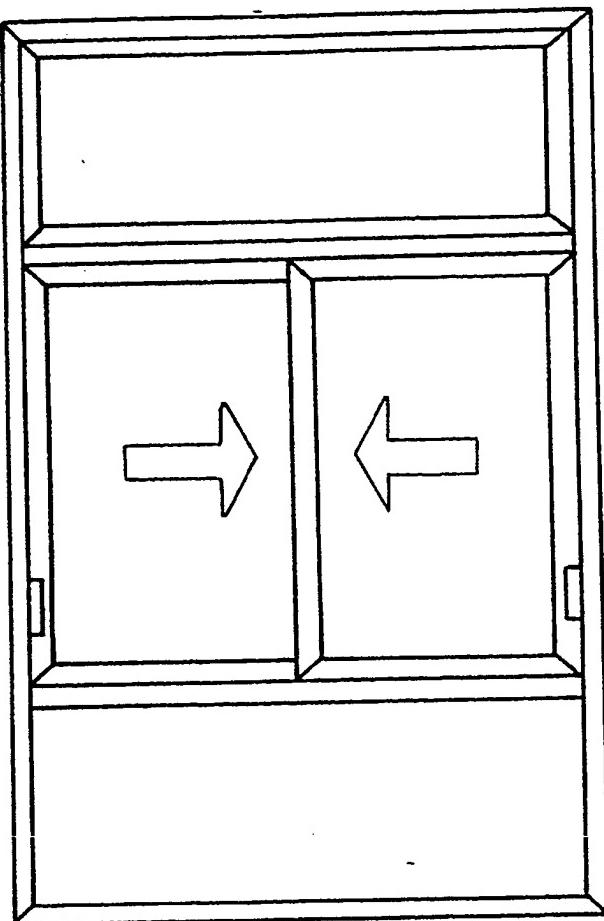


Fig. 12

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Fig. 13



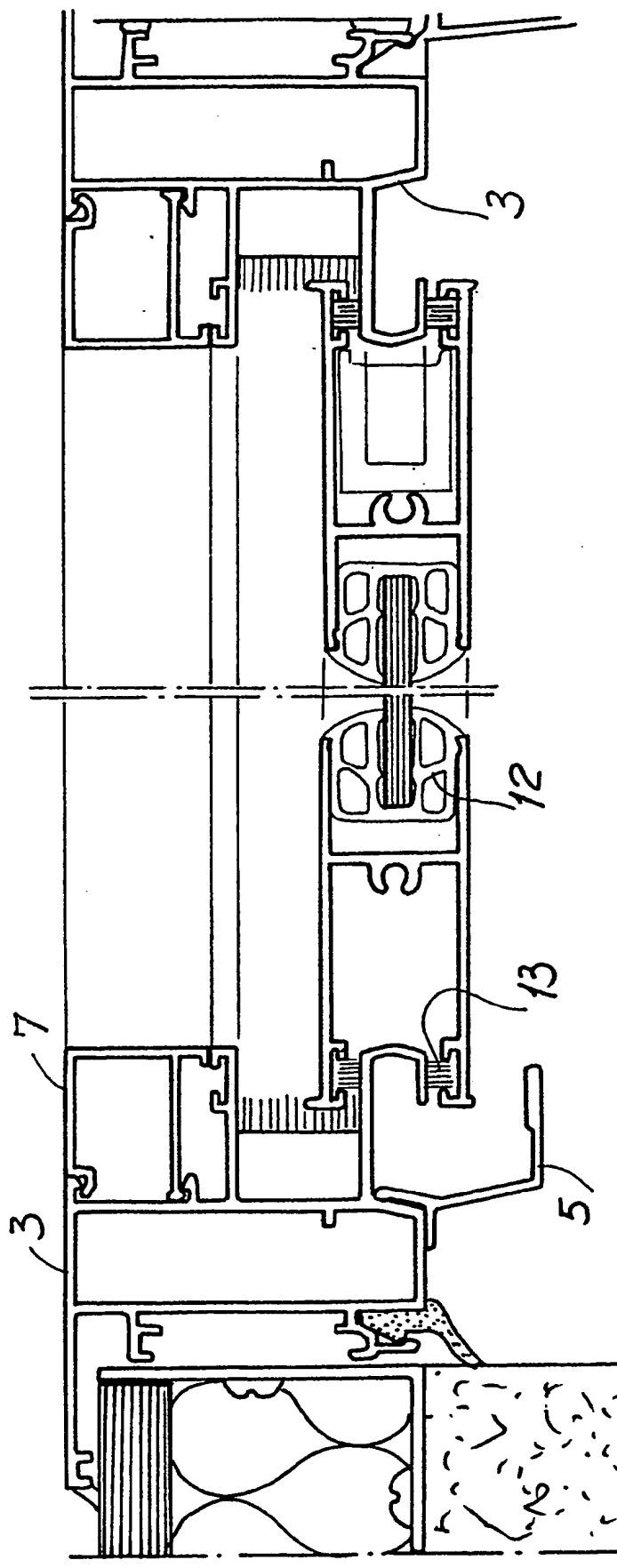


Fig. 15

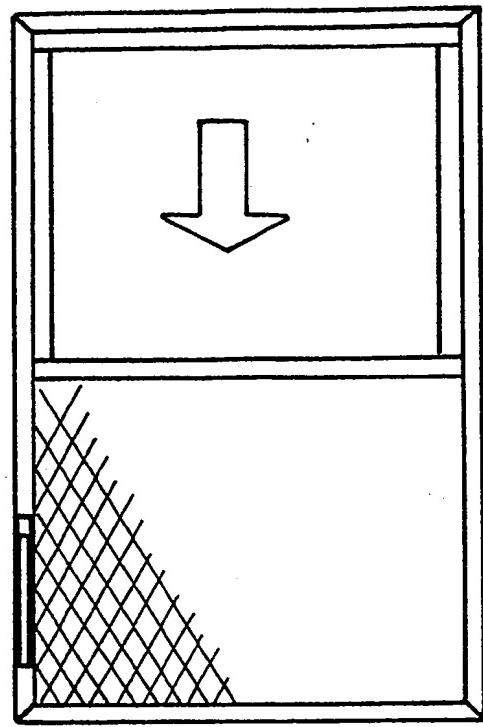


Fig. 14

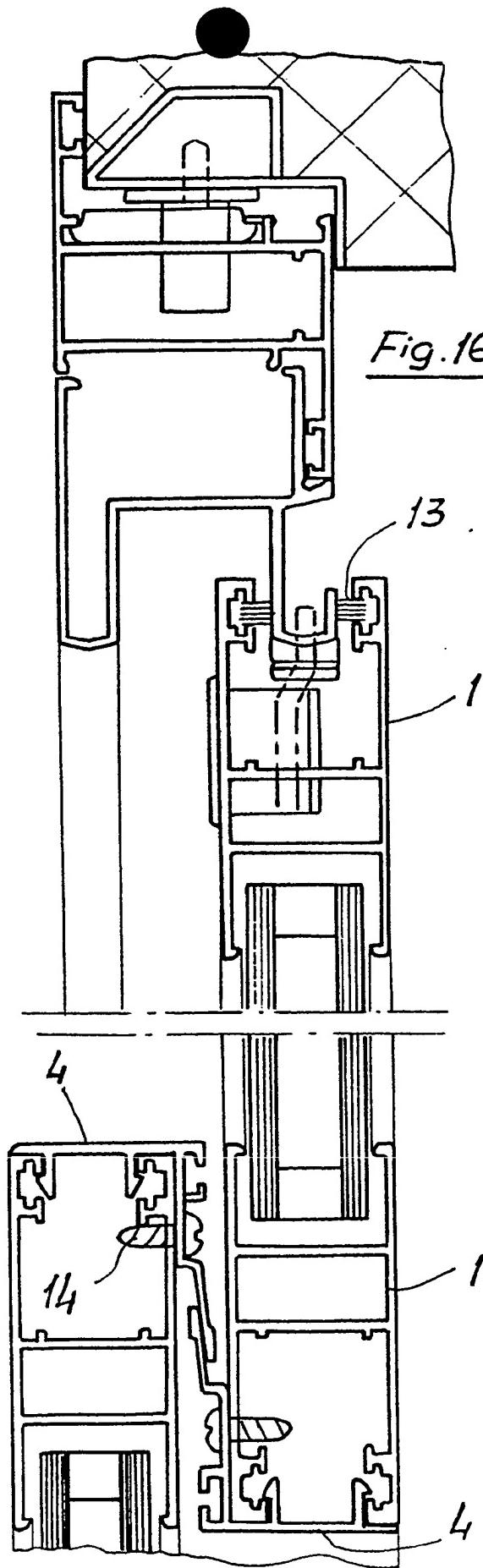


Fig. 16

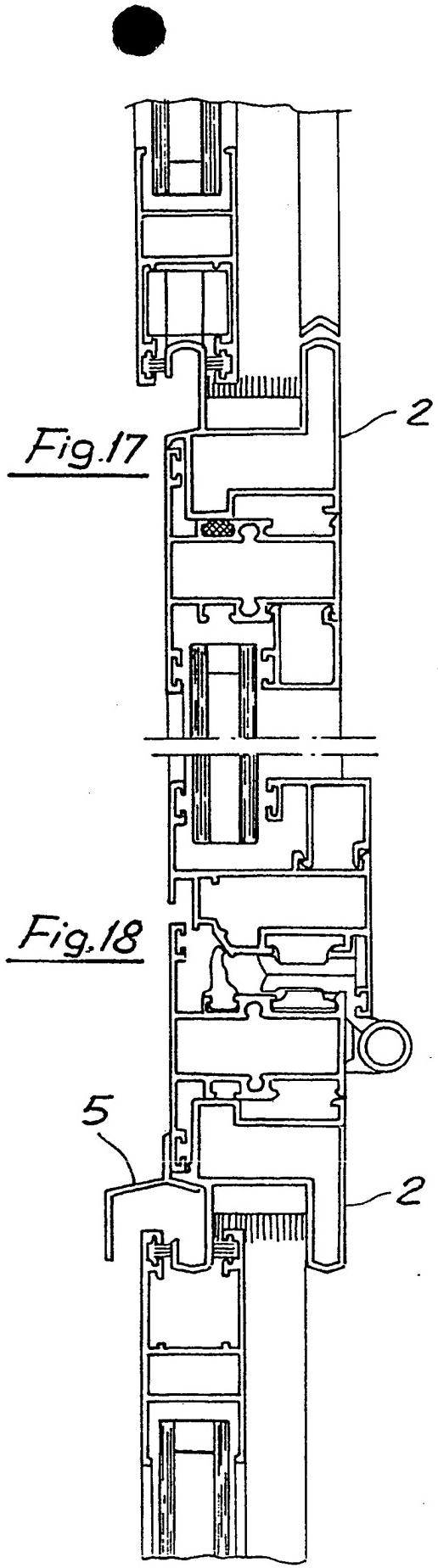


Fig. 17

Fig. 18



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	FR-A-2 554 498 (ALL. CO) * Page 1, line 27 - page 8, line 31; figures 1-21 *	1-4	E 06 B 3/46
A	FR-A-2 268 144 (AUBIN) * Page 6, line 5 - page 8, line 21; figures 1-11 *	1-4	
A	FR-A-1 403 208 (BARTHELEMY) * Page 2, column 1, line 8 - page 3, column 1, last line; figures 1-7 *	1-4	
A	FR-A-2 328 094 (AUBIN) * Page 2, line 35 - page 5, line 39; figures 1-11 *	1-4	
A	DE-A-1 509 881 (SCHÜRMANN) * Page 3, line 9 - page 6, line 15; figures 1-5 *	1-4	
	-----		TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			E 06 B
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	25-07-1988	DEPOORTER F.	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
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